

FLIGHT STANDARDIZATION BOARD
EUROCOPTER DEUTSCHLAND EC-145
TRANSPORT CATEGORY

APPROVED: Edward L. Hinch 06-17-03
EDWARD L. HINCH, CHAIRMAN DATE

CONCUR: Mark Fletcher 06-18-03
MARK FLETCHER, ACTING MANAGER, FORT WORTH DATE
AIRCRAFT EVALUATION GROUP, FTW AEG

CONCUR: JK Joubert 09/03/03
MANAGER, AIR TRANSPORTATION DIVISION, AFS-200 DATE

CONCUR: John M Weneel 4/9/03
for MANAGER, GENERAL AVIATION & COMMERCIAL DIVISION DATE
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EUROCOPTER EC-145 PART I

1. Purpose and applicability:

The purpose of this report is to insure complete coverage and documentation of all Flight Standards responsibility regarding the type certification of the Eurocopter EC-145 (BK-117C-2), a four bladed, twin engine, turbine powered, 9 passenger, Transport Category Helicopter.

This aircraft is certificated under FAR 29, Category B, Transport Category, and is approved for Day/Night VFR. This aircraft is being presented for Type Validation as a derivative of the Eurocopter BK-117.

This aircraft is capable of being utilized for scheduled Commuter Operations and On-demand Operations under Part 135, pilot training under Part 61, and Private carriage under Part 91. Other possible uses include operations under Part 137, and Part 133.

Pilot Type Rating Requirements:

This aircraft is certificated as a Part 29 Transport Category Rotorcraft with gross weight less than 12500 pounds therefore no type rating is required.

Master Common Requirements (MCR's):

N/A

Master Differences Requirements (MDR's):

N/A

Acceptable Operator Difference requirements table:

N/A

FSB Specifications for Training:

This aircraft is a derivative of the BK-117 and the EC-135 therefore it requires aircraft specific training to meet the requirements of FAR 135.293(a) & (b), 135.345, and 135.347. The training requirements of the "Directive of the German Ministry of Transport for Training and Examination of Aviation Personnel" (LuftPersV), Chapter 16/B is sufficient for qualification in this aircraft.

FSB Specifications for Checking

All checks required by 14 CFR Part 135 must be accomplished in make and model. Flight checks are conducted in accordance with the instruction, guidance, and requirements contained in the appropriate Practical Test Standards and supplemented by guidance in FAA Orders 8700.1, 8400.10 and/or 8710.3.

FSB Specifications for Currency

The provisions of FAR 61.57 apply to this helicopter.

Aircraft regulatory compliance checklist

N/A

FSB Specifications for Devices and Simulators

Advisory Circular 120-63 outlines specifications for Helicopter simulators. Criteria for flight training devices have not yet been developed.

Application of FSB Report

All Operators

Alternate means of compliance

N/A

Miscellaneous

EUROCOPTER EC-145

PART II

Background:

This aircraft is presently certificated under FAR 29, Category B, Transport Category , and is approved for Day/Night VFR. This aircraft is being presented for Type Validation as a derivative of the Eurocopter BK-117.

This aircraft is capable of being utilized for scheduled Commuter Operations and On-demand Operations under Part 135, pilot training under Part 61, and Private carriage under Part 91. Other possible uses include operations under Part 137, and Part 133.

FSB Composition:

Chairman – Edward L. Hinch, Operations Inspector, Fort Worth Aircraft Evaluation Group.

FSB Member – Angelo Spelios, Operations Inspector, Fort Worth Aircraft Evaluation Group.

FSB Observer – Frank Phillips, AFS-800, Washington, D.C.

Eurocopter conducted the flight training under their Type Rating Program, BK-117, which followed the requirements of the “Directive of the German Ministry of Transport for Training and Examination of Aviation Personnel”, (LuftPersV), chapter 16/B. The required flight time under this program is as follows:

Group A – Pilots with experience in twin medium helicopters – approx. 6 flight hours.

Group B – Pilots with experience in single engine turbine helicopters – approx. 10 flight hours.

Group C – Pilots with experience in piston engine powered helicopters – approx. 15 flight hours.

Type Ratings and Crew Qualification Tests, and FSB Determinations: This aircraft is to be certificated as a Part 29 Transport Category Rotorcraft with a maximum gross weight less than 12,500 pounds therefore no type rating is required. This aircraft displays some flight characteristics that are critical in nature and must be stressed during initial aircraft qualification. These characteristics are common to most single rotor rotorcraft but are pronounced in this aircraft. A “WARNING” is contained in Chapter 4 of the Rotorcraft Flight Manual, 4.13.2, **Lateral control characteristics**, which addresses the

conditions where insufficient lateral control might occur. This area must be stressed during training.

Public Meeting Record and Resolution of Comments: N/A

Summary and Conclusions: Each member of the Flight Standardization Board completed the Type Rating Program conducted by Eurocopter Deutschland, in Donaworth, FRG. The maneuvers required by the Practical Test Standards for Airline Transport Pilot and Aircraft Type Rating for Helicopter were evaluated during flight. Training in this aircraft should conform to the Factory training and stress the areas covering Lateral Control Characteristics.

Although this aircraft is being certificated as a derivative of the Eurocopter Deutschland BK-117, FAR Part 29, the aircraft contains features/components of two different aircraft. The basic fuselage has been enlarged to accommodate up to nine passengers and the cabin framework is a one-piece structural component. The cockpit design is that of the EC-135. Mast moments are more critical and the mast moment indicator is not an optional piece of equipment. Additionally, Turbomeca ARRIEL 1E2 engines are not FADEC controlled and the fuel control of each engine is controlled by twist grips, which are part of the collective lever.

The cockpit configuration contains a Central Panel Display system consisting of a Vehicle and Engine Management Display (VEMD) and Caution and Advisory Display (CAD). If the VEMD fails, the CAD can display selected parameters. If the CAD fails, the VEMD displays selected cautions. The primary power depiction is derived from the engine parameters, which are electronically monitored and the critical engine limit is displayed on a "FLI", first limit indicator. The VEMD module computes the FLI from the N1, TRQ, and TOT parameters. The FLI pointer always indicates the parameter with the closest value to a limitation.

Flight checks are to be conducted in accordance with the instruction, guidance, and requirements contained in the appropriate Practical Test Standards and supplemented by guidance in FAA Orders 8700.1, 8400.10 and/or 8710.3.

There are no variants for the EC-145 therefore all checks required by 14 CFR Part 135 or Part 61 must be accomplished in make and model.